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ABSTRACT

Results of a study of voter behavior in three actual and two hypothetical school budget and bond elections in Missouri's Columbia Public School District suggest that voters can be effectively classified so that voting behavior can be predicted. Over 450 registered voters responded to a mailed questionnaire featuring 46 items that measured socioeconomic and attitudinal variables and 7 items that measured voting behavior. Chi-square and discriminant function analyses revealed several consistently significant predictor variables. Decisions to vote or not to vote correlated strongly with the respondent's number of children, residential mobility, family income, and level of knowledge about the schools. Decisions to vote for or against school levy or bond measures correlate strongly with the respondent's number of children, political orientation, ownership of a home, occupation, educational attainment, and attitudes toward the schools' personnel, efficiency, and effectiveness. It is suggested that increases in the level of communication between the schools and voters lead to increased support of school measures at the polls. (PGD)

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PREDICTION OF VOTING BEHAVIOR IN LOCAL SCHOOL DISTRICT FINANCIAL REFERENDA

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PREDICTION OF VOTING BEHAVIOR IN LOCAL
SCHOOL DISTRICT FINANCIAL REFERENDA

Abstract

The present study focuses on the identification of conceptually clear and statistically significant predictive relationships between voters' socioeconomic and attitudinal characteristics and their behavior in school district financial referenda. Data were collected from 452 registered voters in a Missouri public school district, using a mail questionnaire of forty-six items to measure socioeconomic and attitudinal variables and seven items to measure voting behavior in three past and two hypothetical future referenda involving both levy approvals and bond issues. Chi-square and discriminant function analyses revealed a composite model of personal, sociological, economic, informational, and attitudinal dimensions which differentiates (a) voters from non-voters and (b) voters who vote for financial referenda from those who vote against these referenda. A refinement of existing theories of school election voting behavior is proposed, along with recommendations about school district referenda campaign strategies.

PREDICTION OF VOTING BEHAVIOR IN LOCAL SCHOOL DISTRICT FINANCIAL REFERENDA[1]

A major problem facing board of education members and school administrators today is how to provide quality education programs with existing methods and levels of financial support. Schools are being asked to assume more and more responsibility for the total education of American youth taking on obligations once assumed to be those of the family, the community and the church. Meeting the needs of special education pupils while adequately serving the academically talented, providing vocational education programs and college preparatory programs, and offering courses varying from sex and drug education to calculus have resulted in spiraling costs for school districts across the nation. These expenses have been coupled with the need for improvement in teachers' salaries in order to attract and retain professional staff members of exceptional competence.

To provide sufficient funds for quality education is not a simple matter. Never before in history has there been greater competing demands on the tax dollar. Programs related to the elderly, unemployment, social welfare, health care, and numerous other areas are competing with the public schools for adequate funding. Most decisions regarding the way tax dollars will be spent are made by legislators on the state and national levels, and average taxpayers feel they have little voice in the amount of taxes paid or in how the money is spent. Only in the case of local financial referenda does the average citizen have direct input as to whether or not taxes are increased. In states

throughout the nation, these local voters have begun to very critically analyze requests for additional taxes and in many cases are rejecting these requests. As a result of this voter reaction, it has become important for school-district officials to better understand voting behavior and voting patterns.

The present study attempts to provide better a understanding of voting behavior investigating and analyzing the proposition that socioeconomic and attitudinal variables have a direct relationship to voting behavior in nonpartisan school financial referenda. Voting behavior was defined as voting or not voting and voting "yes" or "no" in selected past and projected future school financial election. The study had as its primary purposes the following: (1) to describe and analyze the relationship between certain socioeconomic and attitudinal variables and whether or not an eligible voter voted or did not vote in selected school financial referenda, and (2) to describe and analyze the relationship between certain socioeconomic and attitudinal variables and whether or not an eligible voter voted "yes" or voted "no" in selected school financial elections. The research hypotheses were as follows:

Ho 1: There are no significant differences between observed frequencies of responses to questions representing discrete variables in the survey instrument and expected frequencies of responses to these variables by citizens in the Columbia School District who are voters and those who are nonvoters in the selected past and projected future school financial elections;

Ho 2: There are no significant differences between observed frequencies of responses to questions representing discrete variables in the survey instrument and expected frequencies of responses to these variables by citizens in the Columbia School District who vote "yes" and those who vote "no" in selected past and projected future school financial elections;

Ho 3: There exists no socioeconomic or attitudinal continuous variables related to potential voters in the Columbia School District and collected by the survey instrument which significantly discriminate between voters and nonvoters in selected past and projected future school financial elections;

Ho 4: There exists no socioeconomic or attitudinal continuous variables related to potential voters in the Columbia School District and collected by the survey instrument which significantly discriminate between voters who vote "yes" and voters who vote "no" in selected past and projected future school financial elections.

THEORETICAL FRAMEWORK

Many who have studied nonvoters in partisan elections suggest that the reason qualified voters fail to vote is that they see no connection between their single votes and any meaningful change in the areas of life that they feel are important.[2] But what about participation in

non-partisan, local elections which ask approval of a variety of financial proposals such as school financial referenda? In these elections, voters are directly involved in decision making which will effect things very important to their lives, such as their children's education and the amount of their property taxes. Yet, turnout for these local referenda is normally substantially less than turnout for national elections.[3] While voter turnout in presidential elections would seem high at 80 percent, normal at 67 percent and low at 50 percent, voter turnout for school financial referenda would be considered high at 45 percent, normal at 25 percent and low at 12 percent.[4]

The reasons for not voting are diverse and complex. Certainly the feeling of futility connected with the immediate outcome of the vote appears to be a significant reason. Even political analysts find it difficult to determine a linkage between a voter's partisan choice and policy out comes, especially if policy change is expected. As Reich[5] explained, too often potential voters simply find little difference in their choice of candidates. Swartz[6] found that most non-voters were politically alienated while McCarthy[7] saw a growing disparity between the "we" of the citizenry and the "they" of the government.

Accurately predicting who will go to the polls is indeed a difficult task. A number of theories have been developed to assist in such an effort, two of which deserve special attention.[8] The first theory stresses the economic rationality of voters.[9] According to this theory, citizens vote when the anticipated benefits of voting exceed the costs. Downs[10] stated that the chief cost of voting is time--time to register, time to seek out information, time to deliberate, and time to mark the

ballot. Citizens' perceptions of the returns they receive from voting is based on the impact they believe their vote will have in deciding the outcome. Applying this theory to local school financial referenda, Piele and Hall[11] found that two groups, parents and property owners, should be especially interested in an issue to increase the school property tax levy. The second theory, one which was researched by Michigan's Survey Research Center and reported by Campbell, Converse, Miller and Stokes,[12] discusses psychological factors and attitudinal correlates as they relate to voting behavior. According to the "psychological" model, the act of voting or not voting is almost habitual and has little to do with a careful analysis of the situation.

A number of researchers who have studied the voting phenomenon conclude that socioeconomic and/or attitudinal variables are the significant factors when predicting who will vote in partisan and nonpartisan elections. Lane[13] found that nonvoters were likely to have lower education, lower income and lower occupational status than voters. Dye and Zeigler[14] discovered that voters who were intensely interested in their community were most likely to exercise the vote. Lipset[15] listed such characteristics as high income and education, middle-age, being married, and white-collar employment as major factors which describe those most likely to vote. Campbell, Converse, Miller, and Stokes[16] reported that strong partisan preference, a high sense of citizen duty, and a high interest in the campaign were among other factors which influenced potential voters to go to the polls.

A significant amount of research has investigated those factors which affect the direction of a person's vote once a decision is made to vote in an election. Many researchers are looking carefully at

socioeconomic, demographic, and attitudinal characteristics as key predictors of voting behavior. Lazarsfeld, Berelson, and Gaudet[17] stated that people think politically as they are socially and indicated that the direction of a person's vote was really a group decision made by those with whom the person associates. Cantor[18] found the sociological influences on voting behavior include such factors as economic status, education, ethnicity, and group membership. He felt that these influences molded the voter's perceptions in a manner which made them endure over time.

The fact that, in many cases, cultural values exist which prescribe behavior for individuals belonging to specific social categories was discovered by Campbell, Converse, Miller, and Stokes.[19] The general assumption is that those having the same social attributes and cultural values will exhibit similar voting behavior. Burdick and Brodeck[20] found that socioeconomic variables accounted for more variation in the vote than any other measure they utilized. The variables which had a relationship with voting behavior were sex, age, religion, race, educational level, and income. The influence of "significant others" on all decisions made by individuals was discussed by Bone.[21] He stated that people never graduate from social influences and strike out wholly on their own. Attitudes and behavior, including voting behavior, are profoundly affected by reference groups and these groups possess similar socioeconomic characteristics.

Hatley,[22] in a study of the relationship of a composite set of specific socioeconomic and demographic variables to voting behavior found no statistically significant relationship between family income and voting behavior in those elections which rely on property tax

funding base. Income could be used as a valid predictor of voting behavior on financial referenda which rely on an income tax funding base. Other factors which exhibited a high degree of relationship with voting behavior were number of children in the family, educational attainment, and length of residence in the school district. Specifically, the larger the number of children in the family, the higher the educational attainment, and the longer the span of time in the district of the citizen, the more likely it was that a person would vote favorably in a school financial election.

In a study of the relationship between socioeconomic variables and votes cast for specific school financial referenda in three Kansas communities, Croskey[23] found that several variables exhibited high overall predictive potential. These variables were sex, marital status, number of children, mobility, and educational level. Age and home ownership showed medium predictive value. Croskey also studied the relationship between attitudes toward the schools and voting behavior on school financial referenda. Teacher related issues, organizational and program efficiency, and administrative and program effectiveness were factors considered. These factors related to attitudes toward the schools did not assist in explaining the variance in voter preference.

Literature related to nonpartisan elections increased during the 1960's and 1970's due to the growing tendency of voters to reject school bond issues and levy increases. Many of these studies report relationships between selected socioeconomic and demographic characteristrics and the direction of the vote. While these studies have made

significant contributions and should be carefully considered when attempting to predict voting behavior in school financial referenda, it must be remembered that the vast majority of the studies of voting behavior are time-and-place specific. The unique characteristics of each community and of the issues submitted to referendum must be considered before any projection of voting behavior can be legitimately attempted.

METHOD

Data Source

For this study, voting behavior in the Columbia, Missouri, School District was investigated. Columbia, Missouri, is a community of approximately 65,000 people located in the center of the state. It serves as the home of three institutions of higher education, five major health care centers, two large insurance companies, and a number of light industrial complexes. The community is a retail trade and agribusiness center for a large portion of central Missouri. There were 37,810 registered voters in the school district at the time of this study.

Three past and two hypothetical future school financial elections were selected for special investigation in the study. The past elections were chosen because they were representative of the type of financial issues which might be presented to the voters by school districts. The first election studies was a 19 cent tax levy increase proposal in 1976 with the funds to be used to support improved transportation services. The improved services would have provided trans-

portation for all students living one-half or more miles from their schools. The Board of Education opposed the proposal which was presented to the voters as a result of a citizens' petition and the issue was badly defeated (27.6 percent favorable vote).

The second election studied was a proposal in 1978 to increase the property tax levy by 19 cents with the additional funds to be used for improving teachers' salaries. The issue required a two-thirds majority of the votes cast for approval and received a 68.8 percent favorable vote. A $3.5 million bond issue in 1979 which required no property tax levy increase was the third election studied. The funds from the bond issue were to be used for the repair and renovation of buildings and new construction. The favorable vote was 83.3 percent exceeding the two-thirds majority required for passage. The two hypothetical future financial issues proposed in the study were a tax levy increase election for general operation expenditures and salaries and a bond issue election which would require no tax levy increase.

The sample of registered voters to be surveyed in the investigation was composed of 2.5 percent of the registered voters from each of six wards within the Columbia city limits and 2.5 percent of the registered voters living in a combination of precincts in that part of the Columbia School District outside the city limits. Of the 945 persons receiving the survey instrument, 452 usable questionnaires well distributed across the seven geographical sub-divisions were returned for a response rate of 48 percent.

Instrumentation

The instrument used in this study is based on one developed by

Hatley and Croskey[24] and used by Croskey in a study of voting behavior in three school districts in Kansas. Items for the instrument were developed from a pool of items relating to voting behavior and used by Hatley[25] in a study of voting behavior in Albuquerque, New Mexico. Hatley's instrument assessed three broad categories associated with school-district residents: (1) their socioeconomic characteristics, (2) their attitudes toward selected school issues, and (3) their voting patterns on school financial referenda.

On the basis of face validity and the results of Hatley's study, 52 items which appeared to measure the categories mentioned above were selected for inclusion in a pilot instrument which was administered to 115 subjects residing in three Kansas school districts. This initial instrument consisted of seventeen questions related to socioeconomic and demographic variables, 31 questions designed to assess voter attitudes toward the school, and four items relating to voting patterns on financial referenda. All attitude and voting behavior items were Likert-scaled.

Responses to the 31 attitudinal items were subjected to Principle Components Factor Analysis with Varimax Rotation.[26] For determining the number of factors present, Kerlinger's[27] basic guidelines for factor analysis in behavioral research and Cattell's[28] suggestions concerning the Scree Test and structure interpretability were followed. Items were deleted from the factor structure if they did not achieve a loading of at least .300 on their principle factor or if they cross-loaded with differences of less than .200 between factors.[29]

Multiple varimax rotations of the pilot study data resulted in the Measure of Attitudes Toward Education (MATE) instrument with the follow-

ing three definable factors which accounted for 60 percent of the attitudinal variance: Factor I, Teacher Related Issues, consisting of six items concerning a person's opinion about issues directly concerning teacher personnel; Factor II, Organizational and Program Efficiency, consisting of seven items addressing a person's feelings regarding issues involving curriculum and money; Factor III, Administrative and Program Effectiveness, consisting of six items concerning a person's attitudes in the areas of school boards, administrators, and the existing programs. Based on Cronbach's Alpha Coefficients, the instruments' internal consistency was judged sufficient to warrant further development.[30]

Following the above analysis, the instrument was modified by Hatley and Croskey to include nineteen attitudinal items rather than the original thirty-one and was readministered to test its factor structure stability, conceptual interpretability, and reliability. This sample was the 1,525 registered voters remaining in the random sample of the three Kansas school districts after the pilot study. The same statistical analysis and decision rules were applied to the data collected from 1,030 usable returns as were applied to the pilot study phase, plus tests for homogeneity of variance.[31]

Factor analysis of the attitudinal data collected from the retest respondents produced results markedly similar to those of the pilot study. The three factor structure again was revealed to be the most meaningful in terms of conceptual interpretability of item clusters within factors. All nineteen items maintained the same factor positions as had been established in the pilot study. In addition, estimates of reliability were even higher than had been attained for the

pilot study instrument's factor structure.[32]

The survey instrument for the present study, in its final form, included seventeen socioeconomic variables, nineteen attitudinal variables (within three MATE factors), one additional specific interest item designed to measure the voter's overall attitude toward the schools, and seven items which attempt to ascertain past and projected voting patterns of school district residents.[33] For the purpose of the present study, seven additional items were added. Three of the items were general interest attitudinal items relating to discipline, basic skills, and equality of educational opportunity. Four items requested information concerning voters' current level of knowledge about schools and asked where they obtain their information. For a display of all variables included in the present study, see Table I.

Analysis of Data

This study attempted to ascertain what information collected by the survey instrument will be most useful in predicting which voters among the total of registered voters in the Columbia School District are most likely to vote and which are most likely not to vote on school financial referenda. Attempts were also made to determine from the information gathered what data can be of greatest assistance in predicting whether potential voters will vote "yes" or vote "no" on school financial referenda. For this purpose, chi-square tests for independence and discriminant analysis were employed.

The first phase of the study compared observed frequencies of responses to questions representing discrete variables from the survey instrument with a set of theoretical or expected frequencies of

TABLE I

VARIABLES INCLUDED IN THE VOTING BEHAVIOR RESEARCH

Variables, by Classification and Type

Criterion Variables (Discrete/Categorical):

A. Voter Participation, and Voting or Not Voting

B. Voting Decisions, Voting For or Against

1. 1976 Tax Levy Referendum (19¢ Levy for Transportation Services)
2. 1978 Tax Levy Referendum (19¢ Levy for Teacher Salary Increases)
3. 1979 Bond Issue Referendum (Building Renovation and New Construction, with No Tax Rate Increase)
4. Hypothetical Future Tax Levy Referendum (Non-Specified Amount of Tax Increase for General Operations, Including Salaries)
5. Hypothetical Future Bond Issue Referendum (Building Renovation and New Construction, with No Tax Increase)

Independent Variables:

A. Socioeconomic and General Interest (Discrete/Categorical)

1. Place of Residence (Ward)
2. Sex
3. Marital Status
4. Ethnic Origin
5. Religious Preference
6. Occupation
7. Home Ownership
8. Political Party Affiliation
9. Political Orientation
10. Best Source of Information about the Schools

B. Socioeconomic and General Interest (Continuous)

1. Number of Children
   a. School-Aged in the Household
   b. Enrolled in the Public Schools
   c. Enrolled in Private or Parochial Schools
   d. Enrolled in College
2. Education Attainment Level
3. Age
4. Length of Residence
   a. In the State
   b. In the School District
   c. At Present Address
5. Family Income Level, for Prior Year
6. Extent of Knowledge about the Public Schools
7. Level of Desire for More Information about the Public Schools
8. Number of Visits to Public School(s), for Prior Year

TABLE I (Continued)

Variables, by Classification and Type

C. Measure of Attitudes Toward Education (MATE) Instrument* (Continuous)

MATE Factor I - "Teacher Related Issues"

1. Teachers are generally paid about what they are worth.
2. Disciplinary action should be applied to teachers who go out on strike.
3. Like everyone else, teachers should have the right to organize and to bargain collectively with their employers.
4. In order that the district attract and keep qualified teachers, teacher salaries should be adjusted upward.
5. The schools should employ teacher aides so that teachers are freed from "nonteaching" duties.
6. A school board should represent the desires of the public rather than the desires of teachers.

MATE Factor II - "Organizational and Program Efficiency"

1. Additional funds for the support of public education should be provided largely at the state government level.
2. More money should be spent to lower the present classroom pupil-teacher ratio.
3. The schools should spend more money on classes like typing, electrical shop, homemaking, and auto mechanics.
4. The schools should spend more money on classes like mathematics, foreign languages, chemistry, physics, and English literature.
5. Generally speaking, the schools in the particular neighborhood in which I live are not as up to date and well equipped as those in other areas of the school district.
6. The federal government should spend more money to provide a better education in school districts like ours.
7. Legal provisions should be developed that allow expenditure of national, state, and local taxes in support of private and parochial schools.

MATE Factor III - "Administrative and Program Effectiveness"

1. All things considered, the local school board is trying to do a good job.
2. In general, children attending our public schools receive an education that is equal to, if not better than, any in the state.
3. All things considered, the public school administration is trying to do a good job.
4. The school system is doing a good job of preparing students for college.
5. Tuition-free public kindergartens should be provided for all children in that age range.
6. The school system is doing a good job of preparing students for making a living.

TABLE I (Continued)

Variables, by Classification and Type
D. Attitudes Toward Education, General Interest Items (Continuous)
1. Discipline is generally good in our public schools.
2. The schools are doing a good job of teaching basic skills, i.e. reading, writing, and arithmetic.
3. Minority children have the same opportunities as white children in this public school system.
4. Your overall attitude toward the public schools of this community is: extremely negative, negative, neutral, positive, or extremely positive?

*Explanatory notes on the MATE Instrument scoring and interpretation:

a. All items are designed for response on a five-point scale with 1=Strongly Disagree, 2=Disagree, 3=Undecided, 4=Agree, and 5=Strongly Agree. In MATE Factor I, items one, two, and six are reverse scored.

b. Factor I has a possible total score of 30 on its combined six items. The nearer the composite score is to 30, the more the respondent is said to hold an attitude of support toward teachers, their worth and rights.

c. Factor II has a possible subscale score of 35 on its combined seven items. The higher the score, the more a person's attitude can be described as being negative regarding the schools' organizational and program efficiency. This interpretation is based on the fact that strong agreement with the items indicates patterns of high dissatisfaction with sources of funds for the schools, with how the funds are allocated among competing programs, and with the efficiency of the public schools as contrasted with private and parochial schools.

d. Factor III has a possible total score of 30 on its combined six items. The higher the score, the more a person's attitude can be described as being supportive of the schools' administration and of the effectiveness of school district programs.

e. In actual use of the MATE for data collection, items do not appear as factor-clustered items for respondent consideration. That is, the items are arrayed as a randomly-ordered set of 19 items to control for possible response set patterning.

responses. The observed frequencies are those obtained empirically by direct observation while the theoretical frequencies are generated on the basis of some hypothesis or line of theoretical speculation which is independent of the data at hand. The question to be answered is whether or not the differences between the observed and expected frequencies are significant.[34] Chi-square was used to measure these differences. Chi-square is a descriptive measure of the magnitude of the discrepancies between the observed and expected frequencies. The expected frequencies are those which are probable if the variables being considered are independent of each other.[35]

Discriminant analysis was used in the second phase of the study. In discriminant analysis, the interest is in finding the linear composite of variables that best discriminate between groups. The principle objective of discriminant analysis is to classify new individuals into groups on the basis of certain characteristics. Stated differently, the primary purpose of discriminant analysis is to find the weights to be attached to each variable in the linear model in order to minimize the probability of incorrect classification. In using discriminant analysis for purposes of classification, therefore, the interest is in knowing how these individual measures should be weighted in order that future individuals can be assigned to appropriate groups.[36]

The use of discriminant analysis as a classification technique is the result of an initial computation to identify variables of discriminant power. Once a set of variables is found which provides satisfactory discrimination for cases with known group membership, a set of classification functions can be derived which will permit the classification of new cases with unknown membership.[37] Thus, if it can be

determined what information collected by the survey instrument on potential voters is most efficient in classifying voter behavior on school financial referenda, the information can be used for predictive purposes in future school financial elections.

The statistical tests mentioned above were conducted on two aspects of voting behavior: (1) voting behavior in the three specified financial elections held in the Columbia School District in 1976, 1978, and 1979; and (2) hypothetical voting behavior on a future school tax levy election requiring a property tax increase and a future bond issue election requiring no increase in the property tax.

FINDINGS

Hypotheses Testing: Chi-Square Test for Independence

The Statistical Package for the Social Sciences (SPSS) computer program for chi-square tests for independence[38] was used to test the first two hypotheses in this study. The hypotheses stated that there are no significant differences between observed and expected frequencies of responses to discrete variables in the survey instrument by voters and nonvoters and by "yes" voters and "no" voters in the school financial elections being studied. Chi-square tests were conducted with each discrete variable being considered separately for the five elections being investigated.

Results are reported in Table II, revealing significant differences between observed and expected frequencies of responses on certain discrete variables in all but one election when both voters and nonvoters and "yes" voters and "no" voters were used for the comparison. However, no meaningful pattern of significant chi-square values are evi-

TABLE II

CHI-SQUARE ANALYSIS: DISCRETE VARIABLES AND VOTING BEHAVIOR

Criterion and Discrete Variables	Selected Financial Referenda (*Indicates .05 Significant Chi Square) 1976 Levy	1978 Levy	1979 Bond	Future Levy	Future Bond
Criterion A: Voter Participation (Voting or Not Voting on Referendum):					
1. Place of Residence (Ward)	-	*	*	-	-
2. Sex	-	-	-	-	-
3. Marital Status	*	-	-	-	-
4. Ethnic Origin	-	-	-	-	-
5. Religious Preference	*	-	*	-	-
6. Occupation	-	-	-	*	-
7. Home Ownership	-	-	-	*	-
8. Political Party Affiliation	*	*	-	-	-
9. Political Orientation	-	-	-	-	-
10. Best Source of Information about the Schools	-	-	-	-	-
Criterion B: Voter Decisions (Voting For or Against Referendum):					
1. Place of Residence (Ward)	-	-	-	-	-
2. Sex	-	-	-	-	-
3. Marital Status	-	-	-	-	-
4. Ethnic Origin	-	-	-	-	-
5. Religious Preference	*	-	-	-	-
6. Occupation	*	*	*	*	-
7. Home Ownership	*	*	-	*	*
8. Political Party Affiliation	-	*	*	*	*
9. Political Orientation	*	*	*	*	*
10. Best Source of Information about the Schools	-	-	*	*	*

Note: Where necessary, categorical responses were combined to assure adequate cell-size distributions for the statistical analysis. For example, on marital status, the response categories of single, married, divorced, and widowed were collapsed into categories of married and not married. Degrees of freedom are not reported in the table, but it is to be noted that chi-square tables ranged from 2X2 for the sex variable to one of 2X7 for the occupation variable and the voting behavior variables. Even though 452 registered voters responded to the survey instrument, the number included in each chi-square analysis varied dependent upon whether the respondent voted and the direction of the vote cast in each separate financial referendum under investigation.

dent across the five referenda, when voter participation is the criterion variable. The one election in which there were no discrete variables having significant chi-square values was the projected bond issue election when voters and nonvoters were the basis of comparison.

Three discrete variables proved to have significant chi-square values in at least four of the five elections being studied when the comparison was with "yes" voters and "no" voters. (See Table II.) These variables which surfaced as important differentiators of voting behavior were political affiliation/orientation, home ownership and occupation. Specific inferences from these analyses are presented later in the discussion section.

Hypotheses Testing: Discriminant Analysis

The SPSS computer program for step-wise discriminant analysis[39] was used to test hypotheses three and four in this study. These hypotheses stated that there exist no socioeconomic or attitudinal continuous variables related to potential voters in the Columbia School District and collected by the survey instrument which significantly discriminate between voters and nonvoters and between "yes" voters and "no" voters in the school financial elections being studied. A step-wise discriminant analysis was computed for each combination of twenty continuous independent variables in each of the five elections investigated to determine the significant predictors of each criterion variable.

Results of the analysis, reported in Tables III and IV, indicate that there are significant predictor variables related to voting or not voting and voting "yes" or voting "no" in all five elections being

TABLE III

SIGNIFICANT PREDICTORS OF VOTING BEHAVIOR, VOTING OR NOT VOTING, USING STEP-WISE DISCRIMINANT ANALYSIS OF TWENTY CONTINUOUS VARIABLES

Analytical Components	Selected Financial Referenda				
	1976 Levy	1978 Levy	1979 Bond	Future Levy	Future Bond
Continuous Variables, with Wilk's Lambda Reported if .05 Significant:					
1. Children in the Household	.898	-	.867	-	-
2. Children in Public Schools	-	-	.891	-	-
3. Children in Private or Parochial Schools	-	.893	-	-	-
4. Children in College	.909	-	-	.922	.940
5. Education Attainment Level	-	.909	.892	-	-
6. Age	.936	-	-	-	-
7. Residence in the State	.922	-	-	-	-
8. Residence in School District	-	.885	-	.926	.951
9. Residence at Present Address	.904	.899	.899	-	-
10. Family Income Level	.914	-	.907	.961	.946
11. Knowledge about Public Schools	.951	.925	.928	.941	.962
12. Desire for More Information	.894	-	.880	-	.937
13. Visits to Public Schools	-	-	.869	-	-
14. Attitudes: MATE Factor I	-	-	.873	-	-
15. Attitudes: MATE Factor II	-	-	-	-	.934
16. Attitudes: MATE Factor III	-	.887	-	.920	-
17. Attitudes: Discipline	-	-	-	-	-
18. Attitudes: Basic Skills	-	-	.876	-	-
19. Attitudes: Minorities	-	-	-	-	.931
20. Attitudes: Overall	-	-	-	-	
Discriminant Analysis Summary:					
Actual Number of Cases					
Voters	308	340	307	413	431
Non-Voters	33	66	111	32	20
Predicted Correct Groupings					
Voters	225	216	208	292	324
Non-Voters	26	55	81	23	14
Percentage Correct Groupings					
Voters	73.1	63.5	67.8	70.7	75.2
Non-Voters	78.8	83.3	73.0	85.7	70.0
Overall	73.6	66.8	69.1	70.8	74.9
Number of Predictor Variables Used in the Analysis	8	6	10	5	7

TABLE IV

SIGNIFICANT PREDICTORS OF VOTING BEHAVIOR, VOTING FOR OR AGAINST, USING STEP-WISE DISCRIMINANT ANALYSIS OF TWENTY CONTINUOUS VARIABLES

Analytical Components	Selected Financial Referenda				
	1976 Levy	1978 Levy	1979 Bond	Future Levy	Future Bond
Continuous Variables, with Wilk's Lambda Reported if .05 Significant:					
1. Children in the Household	.857	-	.719	.772	.817
2. Children in Public Schools	.883	-	.735	.774	.826
3. Children in Private or Parochial Schools	-	-	-	-	-
4. Children in College	.861	-	-	-	-
5. Education Attainment Level	-	.792	.824	.850	.832
6. Age	-	.778	.724	-	-
7. Residence in the State	-	.773	.729	-	-
8. Residence in School District	-	.769	-	-	-
9. Residence at Present Address	-	.786	.746	-	-
10. Family Income Level	-	.798	.712	.791	-
11. Knowledge about Public Schools	-	-	-	-	.821
12. Desire for More Information	-	-	.709	-	-
13. Visits to Public Schools	.853	-	-	-	-
14. Attitudes: MATE Factor I	.868	.846	.803	.823	.815
15. Attitudes: MATE Factor II	.935	.828	.766	.803	.864
16. Attitudes: MATE Factor III	.902	.878	-	.892	.889
17. Attitudes: Discipline	-	-	.715	-	.847
18. Attitudes: Basic Skills	-	.781	.754	.783	-
19. Attitudes: Minorities	-	-	-	-	-
20. Attitudes: Overall	.850	.810	.781	.778	.812
Discriminant Analysis Summary:					
Actual Number of Cases					
Voters For Referendum	217	281	262	285	382
Voters Against Referendum	91	59	45	135	53
Predicted Correct Groupings					
Voters For Referendum	155	219	212	214	299
Voters Against Referendum	59	44	34	95	38
Percentage Correct Groupings					
Voters For Referendum	71.4	77.9	80.9	75.1	78.3
Voters Against Referendum	64.8	74.6	75.6	70.4	71.7
Overall	69.5	77.4	80.3	73.6	77.5
Number of Predictor Variables Used in the Analysis	8	11	13	9	9

considered. Using models ranging from five to ten discriminant variables, correct classification of the survey respondents as voters or nonvoters ranged from 66.8 percent for the 1978 levy referendum to 74.9 percent for the hypothetical future bond referendum. The following variables were significant in at least four elections when continuous data and the three MATE attitudinal factors were compared with the voter participation criterion variable, voting or not voting: number of children, mobility, knowledge about the schools, and income.

When the continuous data and the three MATE attitudinal factors were compared with the voter decision criterion variables, voting "yes" or voting "no", the following variables were significant in at least four of the five elections: number of children, educational level, MATE Factor I--Teacher-Related Issues, MATE Factor II--Organizational and Program Efficiency, and MATE Factor III--Administrative and Program Effectiveness. As indicated in Table III, discriminant analyses to test the efficacy of models to classify voters as to their decisions to vote for or against the selected referenda produced predictor models ranging from nine to thirteen discriminant variables. Overall correct classification levels ranged from 69.5 percent for the 1976 levy referendum to 80.3 percent for the 1979 bond referendum.

Based on this information, hypotheses and sub-hypotheses stating that there were no continuous variables included in the survey instrument which would discriminate between voters and nonvoters and "yes" and "no" voters in the five elections studied were rejected. To reject hypotheses is one thing; to draw meaningful inferences from the analytical treatment of data is yet another. It is upon potentially

insightful inferences about voting behavior that the remainder of this paper focuses.

DISCUSSION

The purpose of this study was to provide school administrators and board of education members with information concerning the relationship occuring between a composite profile of socioeconomic and attitudinal characteristics of registered voters and their voting behavior on school financial referenda. At a time when it has become progressively more difficult to pass school tax levy increases and bond issues, it has become more important than ever for school officials to understand the characteristics of potential voters which will help determine whether or not they will actually vote in a school financial election and, if so, how they will vote. With this information, school personnel can more adequately plan campaign strategies which will assist in the passage of school financial referenda.

From the data which have been collected and analyzed in the present study, it is clear that a knowledge of the socioeconomic backgrounds and attitudes of citizens will assist in classifying them as potential voters or nonvoters and as potential "yes" voters or "no" voters. The discriminant analyses illustrated that correct classifications in the voter and nonvoter groups ranged from almost 67 percent to approximately 75 percent, depending on the election being considered. Correct classifications of citizens who were "yes" voters and "no" voters ranged from almost 70 percent to over 80 percent, depending on the election being investigated. A review of the findings in the study shows that some variables were consistently significant when compared

to voting behavior in the five elections being investigated while other variables appeared significant only rarely or not at all.

In an effort to conceptually synthesize which variables appear to be good predictors across five elections and over time, Table V is presented. Similar to the approach taken by Hatley and Croskey[40] in the study of Kansas school districts, Table V includes dimensions which were inferred from the socioeconomic and attitudinal variables that appeared significant within and across the school financial elections being analyzed. Five construct dimensions are presented: (1) Personal, (2) Sociological, (3) Economic, (4) Information, and (5) Attitudes Toward Education. Indications of the composite predictive potential of specific variables within each dimension is based on the incidence of each variable's observed significance at the .05 level in the five chi-square tests for independence and in the five discriminant analyses for each of the two criterion variables.

The Personal Dimension includes age, sex, marital status, and number of children. This latter variable includes number of children in the household, in public schools, in private and parochial schools, and in college. These variables about children collapsed into the more general classification because one or more of the variables consistently appeared in the discriminant analyses, but the data were not sufficient to suggest specifically what particular aspect of number of children is most important.

The Sociological Dimension includes ethnicity, political party affiliation and/or orientation, religion, and mobility. The last variable is a combination of length of residence at the present address,

TABLE V

SYNTHESIS OF SCHOOL FINANCIAL REFERENDA VOTING BEHAVIOR PREDICTORS

Construct Dimensions and Variables	Observed Predictive Power: Number of Referenda with .05 Significance (Five Possible)		Composite Predictive Potential*	
	Participation, Voting or Not Voting	Decision, Voting "Yes" or "No"	Participation	Decision Propensity
Personal Dimension				
Age	1	2	Low	Low
Sex	0	0	Low	Low
Marital Status	1	0	Low	Low
Number of Children	5	4	High	High
Sociological Dimension				
Ethnicity	0	0	Low	Low
Political Affiliation and/or Orientation	2	5	Low	High
Religious Preference	2	1	Low	Low
Mobility	5	2	High	Low
Economic Dimension				
Family Income	4	3	High	Mod.
Residence Location	2	0	Low	Low
Home Ownership	2	4	Low	High
Occupation	1	4	Low	High
Education Attainment	2	4	Low	High
Information Dimension				
Level of Knowledge about the Schools	5	2	High	Low
Sources of Information about the Schools	0	3	Low	Mod.
Number of Annual Visits in the Schools	1	1	Low	Low

TABLE V (Continued)

Construct Dimensions and Variables	Observed Predictive Power: Number of Referenda with .05 Significance (Five Possible)		Composite Predictive Potential*	
	Participation, Voting or Not Voting	Decision, Voting "Yes" or "No"	Partic-ipation	Decision Propensity
Attitudinal Dimension				
MATE Factor I: Teacher Related Issues	1	5	Low	High
MATE Factor II: Organizational and Program Efficiency	1	5	Low	High
MATE Factor III: Administrative and Program Effectiveness	2	4	Low	High
Specific Attitudes:				
Discipline	0	2	Low	Low
Basic Skills	1	3	Low	Mod.
Minority Opportunity	1	0	Low	Low
Overall Attitude	0	5	Low	High

*Decision rules for determining Composite Predictive Potential:
Low = Variable shown to be significant in the analysis of voting behavior in two or fewer referenda, Low Predictive Potential.
Mod. = Variable shown to be significant in the analysis of voting behavior in three referenda, Moderate Predictive Potential.
High = Variable shown to be significant in the analysis of voting behavior in four or more referenda, High Predictive Potential.

length of residence in Missouri, and length of residence in the Columbia School District. These three variables related to residence were collapsed into one for reasons similar to those related to number of children. The Economic Dimension includes income, location of residence, home ownership, occupation, and educational level. The Information Dimension includes knowledge about the schools, the best source of school-related information, and number of visits in the schools. The Attitudinal Dimension includes the three MATE instrument factors involving attitudes toward personnel, efficiency and effectiveness of the schools, plus attitudes toward discipline, basic skills, and opportunities of minority children in the schools, and overall attitude toward the schools.

The objective of the researchers in providing a synthesis of voting behavior predictor variables within a conceptual framework is to contribute to theory development by identifying those variables which are powerful predictors, those with medium strength, and those which are of limited value across the five elections being studied. While in each individual election different combinations of variables show significance based on the uniqueness of the election, it is of interest to identify those variables which consistently show significance regardless of the type of school financial referenda being investigated.

When predicting whether or not a person will vote in the types of elections investigated in this study, number of children, mobility, knowledge about the schools, and income have high predictive potential. The remaining variables must be viewed as questionable contributors. Regarding the variable of knowledge about the schools, it must be noted that the instrument used in the present study assessed only the regis-

tered voters' perception of the extensiveness and comprehensiveness of this informational base. Profound differences might well exist in what the voters perceive as "extensive" information and as "inadequate" information. Also, within the context of this study, no attempts were made to measure the accuracy of the voters' information about the schools.

Powerful predictors related to the direction of a person's vote, voting "yes" or "no", are number of children, political affiliation/orientation, home ownership, occupation, educational level, attitudes about Teacher-Related Issues, attitudes about the schools' Organizational and Program Efficiency, attitudes about the schools' Administrative and Program Effectivness, and overall attitude toward the schools. Income, the best source of information about the schools, and attitudes about the schools' successes in teaching basic skills exhibit moderate predictive potential. The remaining variables seem to have limited predictive value.

These current findings tend to support the notion of an educational life-style typology, as proposed in 1972 by Hatley and Burlingame,[41] for differentiating voters who support school financial referenda from those who oppose the referenda. Much of their typology relative to voting behavior in school financial elections stresses the importance of voter attitudes toward the schools. The fact that attitudinal variables along with educational attainment, number of children, and occupation tend to have high predictive potential substantiates the idea of an educational life-style typology. Supportive assertions about the efficiency of attitudinal variables in predictive models of school fi-

nancial referenda voting behavior does partially contradict the Personalistic Socioeconomic Status Theory proposed by Hatley and Croskey[42] in 1977. Their analysis of voting behavior in Kansas school districts did not show attitudes to be highly predictive of how individuals express support for or opposition to school financial support issues at the polls, prompting them to develop their partial theory without an attitudinal construct component.

Common to the Hatley and Burlingame research, the Hatley and Croskey research, and the present study are variables which significantly differentiate distinct patterns of voting behavior. These variables cluster in four dimensions which exhibit considerable conceptual clarity: the Personal Dimension, the Sociological Dimension, the Economic Dimension, and the Informational Dimension. By adding an Attitudinal Dimension and on the strength of an extensive body of prior research, a full-blown theory of school financial referenda voting behavior appears to be within reasonable grasp of future researchers.

To summarize where prior research efforts and the present study have led in terms of differentiating voters from nonvoters and "yes" voters from "no" voters, Table VI is presented to describe the active voters and the "yes" voters within the five-construct model. Common to both criterion variables of active voter participation and supportive patterns in the voting booth are having children at home and enrolled in the public schools, having a history of relatively low geographic mobility, and having middle to upper economic status. Unique to the "yes" voters are variables related to political party affiliation and orientation, education attainment, home ownership, trusted

TABLE VI

CONSTRUCT DIMENSION PROFILES OF THOSE WHO TEND TO VOTE AND WHO TEND TO VOTE "YES" IN SCHOOL FINANCIAL REFERENDA

The Active Voters:	The "Yes" Voters:
The Personal Dimension	
Have children residing at home and enrolled in the public schools.	Have children residing at home and enrolled in the public schools.
The Sociological Dimension	
Are less mobile than their counterparts, having lived in the district and at their current addresses for extended periods of time.	Are less mobile than their counterparts, having lived in the district and at their current addresses for extended periods of time. Are registered Democrats or Independents and describe themselves as "liberals" or "moderates."
The Economic Dimension	
Are in an income class which is above the average for the community.	Are in an income class which is above the average for the community; have a high level of education, including some college; and work in professional, clerical, or homemaker roles. Are renters or homeowners who have not yet retired their mortgages.
The Informational Dimension	
Have an extensive and comprehensive knowledge base about the public schools, or at least they believe this to be the case.	Regardless of the extent of the knowledge base, desire still more information about the schools, and look to school sources for this information rather than to the mass media.
The Attitudinal Dimension	
Participate in the financial referenda somewhat independent of their attitudes about the conditions, operations, and effectiveness and efficiency of the schools.	Have highly positive attitudes regarding the public schools' teaching staff, administration, program efficiency and effectiveness, and overall operations and conditions.

sources of information about the public schools, and markedly positive attitudes about the efficiency and effectiveness of the public schools.

IMPLICATIONS

This study reveals that a number of socioeconomic and attitudinal variables significantly affect voting behavior in school financial referenda. These variables differ according to the type of election being considered and the type of voting behavior being studied. When the voting behavior being studied is whether or not a person will vote in a school financial election, the most significant predictor variables tend to be personalistic or socioeconomic in nature. Attitudes, while showing limited significance in some types of elections, do not seem to play a major role in predicting who will or will not vote on a school financial issue. A broad conclusion that might be drawn from this information is that since school officials cannot control such socioeconomic variables as educational level, age, number of children, and political affiliation, there is little that can be done by school officials to "get out the vote."

When the voting behavior being studied is a vote of "yes" or "no" in a school financial election, it appears that school officials and campaign strategies can have a definite effect on the vote. As was the case when considering voters and nonvoters, certain personalistic and socioeconomic variables surface as significant predictors. Predictive potential increases when attitudinal variables are added to the prediction model. It seems clear from data gathered and analyzed in the present study that attitudes significantly affect positive or negative votes.

School officials are in a unique position to help formulate the attitudes of the voting public toward the school system. These officials can provide numerous opportunities for school patrons to learn more about their schools and, hopefully, to form positive attitudes toward the schools. In the present study, it was evident that the more knowledgeable citizens were about the schools, the more likely it was that they would vote in the election and that their vote would be positive. Results from the study also showed that voters who indicated that their best sources of information about the schools were school personnel, school meetings, or school publications were more likely to vote in favor of school financial referenda than were those who received their information from other sources.

The fact that persons who are knowledgeable about the schools and who receive their information primarily from school-related sources tend to be supportive of school financial issues emphasizes the point that school officials must communicate more effectively and on a continuing basis with school patrons. Currently on the national scene, most communications are between the school and parents of young people attending school even though over seventy percent of a school district's voters will not have children in school at any one time.[42] This points out the need for more general communications with the entire community through newsletters, public meetings, more effective use of the news media, and other methods which would allow for more direct communications between the schools and the total community. The assumption that accompanies the recommendation for improved communications is that the more people know about their schools, the more supportive they will be

of the school program. Positive attitudes will be formed with the end results being greater chances of passing bond issues and tax levy increases.

While school officials may not be able to secure a greater turnout of voters for school financial elections, they can possibly affect the direction of the vote of citizens who do go to the polls. This may be done through promoting the local school program in such a way that the community has a positive attitude toward the school system. The finding that attitudes do affect whether or not a voter will support a school financial issue dramatizes the need for vigorous school-community relations programs in all public school systems. Just which method(s) of information dissemination work best to shape positive attitudes throughout the district and within specific socioeconomic and cultural groupings is not clear. This represents an important area for future research.

NOTES

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